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Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-577



CH-47F Modernized Cargo Helicopter (CH-47F Block II)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Sensitivity Originator

No originator info Available at this time.

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
\$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
\$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

CH-47F Modernized Cargo Helicopter (CH-47F Block II)

DoD Component

Responsible Office

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Date Assigned: June 29, 2017

References

SAR Baseline (Development Estimate)

Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated February 01, 2018

Approved APB

Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated February 1, 2018

Mission and Description

The CH-47F Block II will support the Army's requirement to be strategically responsive across the full spectrum of operations. Its mission is transportation of ground forces, Class III/Class V supplies and other battle critical cargo in support of all future contingencies. With a significantly increased payload and operational reach, the CH-47F Block II will enable the Army to better support the rapid response capability necessary for forcible and early entry contingency missions, as well as tactical and operational nonlinear, noncontiguous, simultaneous or sequential operations, which will be characteristic of future operations. The CH-47F Block II is a future force system that supports Force 2025 and Beyond. As the Army's only heavy lift capability, the CH-47F Block II serves as a combat multiplier in the Multi-Domain Battle.

The CH-47F Block II acquisition program upgrades existing CH-47F aircraft and procures common hardware that exists between the CH-47F and MH-47G aircraft for Special Operations Forces. The CH-47F Block II program provides additional capability to the field with greater reach, increased payload capacity and an increase in maximum gross weight to 54,000-pounds. These improvements are based on airframe and subcomponent changes. Specifically, the Advanced Chinook Rotor Blades will significantly increase lift in high-hot conditions while improved flight control and drive train components will both significantly increase aircraft performance and reduce O&S costs. The program updates the Common Avionics Architecture System and Digital Advanced Flight Control System systems of the aircraft and incorporates other avionics changes introduced into the final CH-47F production lots. CH-47F Block II will also include a strengthened airframe which introduces significant commonality with the MH-47G and improvements to both the fuel and electrical systems which will both improve safety and reliability for the aircraft. Along with providing a significantly increased capability to the field, the program includes provisions for anticipated future upgrades as well as weight and cost savings initiatives to ensure the Army with a platform with the flexibility and performance needed to meet the needs of the future force until a Heavy Future Vertical Lift variant is fielded.

Executive Summary

Program Highlights Since Last Report

This is the initial SAR submission for the CH-47F Block II program.

The CH-47F Block II program is in EMD. The EMD contract was awarded July 27, 2017. System Critical Design Review was completed December 07, 2017.

The CH-47F requirements are stable and funding is adequate to meet cost, schedule and performance objectives established in the currently approved APB. As this is the initial CH-47F Block II SAR, no increase in risk can be assessed. This report serves as the baseline for risk in the December 2018 Annual SAR.

There are no significant software-related issues with this program at this time.

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
July 2017	The Army Acquisition Executive ADM approved Milestone B, authorizing the CH-47F Block II program to enter EMD and designating the CH-47F Block II as ACAT IC.
July 2017	The CH-47F Block II EMD contract was awarded to The Boeing Company.

Threshold Breaches

APB Breaches

Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches

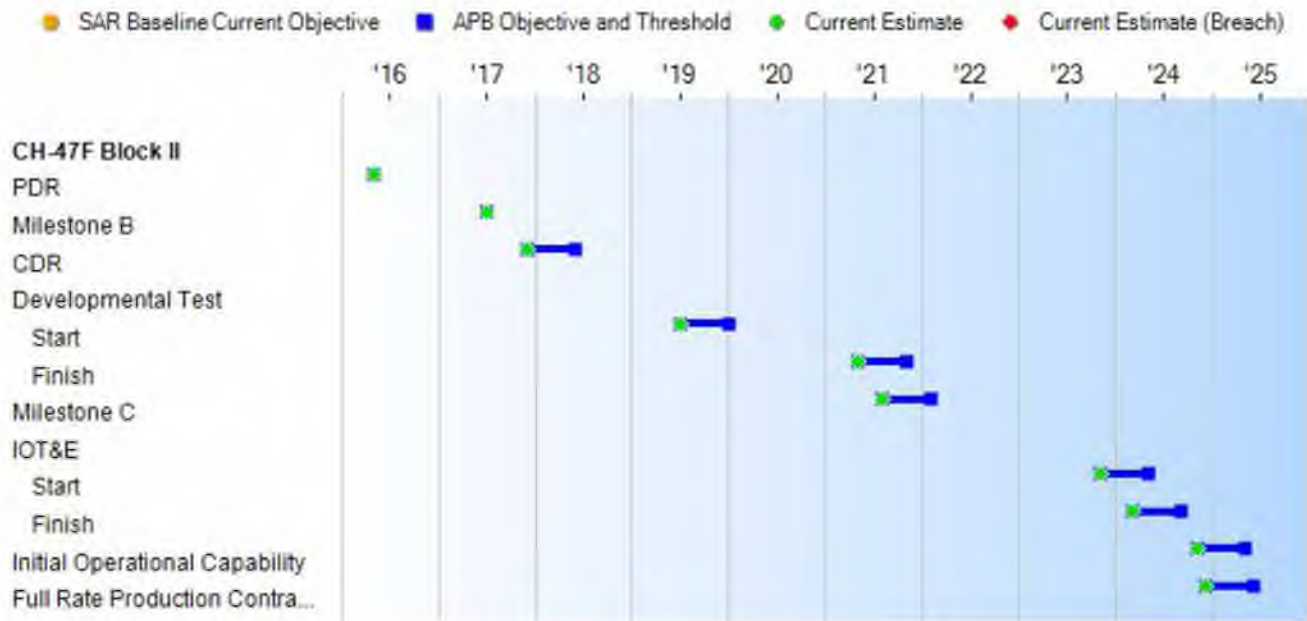
Current UCR Baseline

PAUC	None
APUC	None

Original UCR Baseline

PAUC	None
APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
PDR	May 2016	May 2016	May 2016	May 2016
Milestone B	Jul 2017	Jul 2017	Jul 2017	Jul 2017
CDR	Dec 2017	Dec 2017	Jun 2018	Dec 2017
Developmental Test ¹				
Start	Jul 2019	Jul 2019	Jan 2020	Jul 2019
Finish	May 2021	May 2021	Nov 2021	May 2021
Milestone C	Aug 2021	Aug 2021	Feb 2022	Aug 2021
IOT&E				
Start	Nov 2023	Nov 2023	May 2024	Nov 2023
Finish	Mar 2024	Mar 2024	Sep 2024	Mar 2024
Initial Operational Capability	Nov 2024	Nov 2024	May 2025	Nov 2024
Full Rate Production Contract Award	Dec 2024	Dec 2024	Jun 2025	Dec 2024

Change Explanations

None

Notes

1/ Developmental Test consists of Integrated Test and Limited User Test. Integrated Test begins with the start of baseline aircraft data collection.

Acronyms and Abbreviations

CDR - Critical Design Review

IOT&E - Initial Operational Test & Evaluation

PDR - Preliminary Design Review

Performance

Performance Characteristics			
SAR Baseline Development Estimate	Current APB Development Objective/Threshold	Demonstrated Performance	Current Estimate
Self-deploy with 30 minute fuel reserve (NM)			
1260	1260	1056	1260
Transport 16,000 lbs of internal/external cargo at 4K/95F with 30 minute reserve (NM)			
100	100	50	100
Transport combat equipped troops:			
Number of Troops			
44	44	31	44
Range (NM)			
150	150	100	150
Reliability:			
Mean Time Between Essential Maintenance Actions (MTBEMA) (flt hrs)			
3.5	3.5	3.3	3.5
Maintenance:			
Total Maintenance Ratio (mmh/flt hr)			
9.2	9.2	9.8	9.2

Requirements Reference

ORD Revision 4 dated January 26, 2006

Change Explanations

None

Acronyms and Abbreviations

F - Fahrenheit
 flt - flight
 hrs - hours
 K - Kilometer
 lbs - pounds
 mmh - maintenance man hour
 NM - nautical mile

Track to Budget

RDT&E

Appn	BA	PE
Army	2040	07 0607137A

Project	Name
ES4	Chinook Product Improvement Program.

Notes: Funding for the CH-47F Block II program began in FY 2015.

Procurement

Appn	BA	PE
Army	2031	01 0210104A

Line Item	Name
A05105	CH-47 SLEP

Notes: Funding for the CH-47F Block II program began in FY 2017.

Army	2031	02 0210104A
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Line Item	Name
AA0252	CH-47 Cargo Helicopter Mods

(Sunk)

Acq O&M

Appn	BA	PE
Army	2020	04 0702806A

Subactivity Group	Name
435	Acquisition and Management Support: Cargo Helicopter

(Shared)

Cost and Funding

Cost Summary

Total Acquisition Cost						
Appropriation	BY 2017 \$M			BY 2017 \$M	TY \$M	
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective
RDT&E	766.2	766.2	842.8	768.7	815.8	815.8
Procurement	15208.8	15208.8	16729.7	15208.4	21425.2	21425.2
Flyaway	--	--	--	14744.5	--	--
Recurring	--	--	--	14425.2	--	--
Non Recurring	--	--	--	319.3	--	--
Support	--	--	--	463.9	--	--
Other Support	--	--	--	418.1	--	--
Initial Spares	--	--	--	45.8	--	--
MILCON	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	244.8	244.8	269.3	247.3	327.7	327.7
Total	16219.8	16219.8	N/A	16224.4	22568.7	22568.7

Current APB Cost Estimate Reference

Army Cost Position dated April 05, 2017

Cost Notes

In accordance with section 842 of the National Defense Authorization Act for FY 2017, which amended Title 10 U.S.C. 2334, the Director of Cost Assessment and Program Evaluation, and the Secretary of the military department concerned or the head of the Defense Agency concerned, must issue guidance requiring a discussion of risk, the potential impacts of risk on program costs, and approaches to mitigate risk in cost estimates for MDAPs and major subprograms. The information required by the guidance is to be reported in each SAR. This guidance is not yet available; therefore, the information on cost risk is not contained in this SAR.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	3	3	3
Procurement	539	539	539
Total	542	542	542

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2019 President's Budget / December 2017 SAR (TY\$ M)									
Appropriation	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
RDT&E	161.8	194.6	157.8	174.4	49.2	32.6	34.8	6.0	811.2
Procurement	198.4	88.6	148.5	175.0	379.5	365.5	501.2	19439.5	21296.2
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	11.2	11.4	11.6	11.9	12.1	271.6	329.8
PB 2019 Total	360.2	283.2	317.5	360.8	440.3	410.0	548.1	19717.1	22437.2
	--	--	--	--	--	--	--	--	--

Quantity Summary										
FY 2019 President's Budget / December 2017 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Development	3	0	0	0	0	0	0	0	0	3
Production	0	0	4	7	8	13	13	17	477	539
PB 2019 Total	3	0	4	7	8	13	13	17	477	542
	--	--	--	--	--	--	--	--	--	--

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
2040 RDT&E Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2015	--	--	--	--	--	--	35.2
2016	--	--	--	--	--	--	38.3
2017	--	--	--	--	--	--	88.3
2018	--	--	--	--	--	--	194.6
2019	--	--	--	--	--	--	157.8
2020	--	--	--	--	--	--	174.4
2021	--	--	--	--	--	--	49.2
2022	--	--	--	--	--	--	32.6
2023	--	--	--	--	--	--	34.8
2024	--	--	--	--	--	--	5.3
2025	--	--	--	--	--	--	0.7
Subtotal	3	--	--	--	--	--	811.2

Annual Funding 2040 RDT&E Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	BY 2017 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2015	--	--	--	--	--	--	35.3
2016	--	--	--	--	--	--	38.0
2017	--	--	--	--	--	--	86.3
2018	--	--	--	--	--	--	187.3
2019	--	--	--	--	--	--	149.7
2020	--	--	--	--	--	--	162.3
2021	--	--	--	--	--	--	44.9
2022	--	--	--	--	--	--	29.2
2023	--	--	--	--	--	--	30.5
2024	--	--	--	--	--	--	4.6
2025	--	--	--	--	--	--	0.6
Subtotal	3	--	--	--	--	--	768.7

Annual Funding 2031 Procurement Aircraft Procurement, Army							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2015	--	--	--	102.2	102.2	--	102.2
2016	--	--	--	43.7	43.7	--	43.7
2017	--	8.7	10.6	33.2	52.5	--	52.5
2018	4	84.1	--	4.5	88.6	--	88.6
2019	7	139.5	--	9.0	148.5	--	148.5
2020	8	167.1	--	7.9	175.0	--	175.0
2021	13	305.7	11.3	62.1	379.1	0.4	379.5
2022	13	327.8	15.3	22.0	365.1	0.4	365.5
2023	17	469.2	24.5	0.3	494.0	7.2	501.2
2024	21	601.9	33.7	55.1	690.7	23.0	713.7
2025	24	687.1	47.2	--	734.3	26.1	760.4
2026	24	702.9	51.5	0.1	754.5	54.3	808.8
2027	23	739.5	58.1	--	797.6	65.9	863.5
2028	24	814.1	63.9	--	878.0	52.6	930.6
2029	24	819.1	64.4	--	883.5	53.2	936.7
2030	24	835.3	66.5	--	901.8	62.2	964.0
2031	24	851.1	66.9	--	918.0	39.4	957.4
2032	24	866.9	69.1	--	936.0	26.4	962.4
2033	24	878.5	69.4	--	947.9	27.9	975.8
2034	24	895.8	71.6	--	967.4	23.6	991.0
2035	24	913.9	72.2	--	986.1	14.1	1000.2
2036	24	929.4	74.4	--	1003.8	14.9	1018.7
2037	24	946.5	74.9	--	1021.4	16.8	1038.2
2038	24	962.3	77.3	--	1039.6	18.1	1057.7
2039	24	979.6	74.2	--	1053.8	19.5	1073.3
2040	24	1000.6	71.9	--	1072.5	20.2	1092.7
2041	24	1022.7	66.3	--	1089.0	21.0	1110.0
2042	24	1052.0	66.5	--	1118.5	22.6	1141.1
2043	25	955.9	63.1	--	1019.0	24.3	1043.3
Subtotal	539	18957.2	1364.8	340.1	20662.1	634.1	21296.2

Annual Funding							
2031 Procurement Aircraft Procurement, Army							
Fiscal Year	Quantity	BY 2017 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2015	--	--	--	102.1	102.1	--	102.1
2016	--	--	--	43.2	43.2	--	43.2
2017	--	8.4	10.3	32.3	51.0	--	51.0
2018	4	80.2	--	4.2	84.4	--	84.4
2019	7	130.2	--	8.4	138.6	--	138.6
2020	8	152.9	--	7.2	160.1	--	160.1
2021	13	274.2	10.1	55.7	340.0	0.4	340.4
2022	13	288.3	13.5	19.2	321.0	0.4	321.4
2023	17	404.6	21.0	0.3	425.9	6.2	432.1
2024	21	508.8	28.5	46.6	583.9	19.4	603.3
2025	24	569.4	39.2	--	608.6	21.6	630.2
2026	24	571.1	41.8	0.1	613.0	44.1	657.1
2027	23	589.1	46.3	--	635.4	52.4	687.8
2028	24	635.8	49.8	--	685.6	41.1	726.7
2029	24	627.1	49.4	--	676.5	40.7	717.2
2030	24	627.0	49.9	--	676.9	46.7	723.6
2031	24	626.3	49.3	--	675.6	29.0	704.6
2032	24	625.4	49.8	--	675.2	19.1	694.3
2033	24	621.4	49.1	--	670.5	19.7	690.2
2034	24	621.2	49.7	--	670.9	16.3	687.2
2035	24	621.3	49.1	--	670.4	9.6	680.0
2036	24	619.5	49.5	--	669.0	10.0	679.0
2037	24	618.5	48.9	--	667.4	11.0	678.4
2038	24	616.5	49.5	--	666.0	11.6	677.6
2039	24	615.3	46.6	--	661.9	12.2	674.1
2040	24	616.1	44.4	--	660.5	12.4	672.9
2041	24	617.4	40.1	--	657.5	12.6	670.1
2042	24	622.6	39.5	--	662.1	13.3	675.4
2043	25	554.7	36.6	--	591.3	14.1	605.4
Subtotal	539	13463.3	961.9	319.3	14744.5	463.9	15208.4

Cost Quantity Information		
2031 Procurement Aircraft Procurement, Army		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 2017 \$M
2015	--	--
2016	--	--
2017	--	--
2018	4	68.8
2019	7	126.8
2020	8	132.7
2021	13	273.6
2022	13	274.3
2023	17	388.7
2024	21	495.2
2025	24	568.2
2026	24	568.1
2027	23	582.2
2028	24	634.1
2029	24	625.4
2030	24	625.3
2031	24	624.6
2032	24	625.5
2033	24	619.6
2034	24	619.4
2035	24	620.0
2036	24	617.9
2037	24	617.1
2038	24	611.2
2039	24	621.2
2040	24	614.2
2041	24	615.5
2042	24	613.3
2043	25	680.4
Subtotal	539	13463.3

Annual Funding		
2020 Acq O&M Operation and Maintenance, Army		
Fiscal Year	TY \$M	
	Total Program	
2019		11.2
2020		11.4
2021		11.6
2022		11.9
2023		12.1
2024		11.9
2025		12.1
2026		12.4
2027		12.6
2028		12.9
2029		13.1
2030		13.4
2031		13.7
2032		13.9
2033		14.2
2034		14.5
2035		14.8
2036		15.1
2037		15.4
2038		15.7
2039		16.0
2040		16.3
2041		16.6
2042		17.0
Subtotal		329.8

Annual Funding		
2020 Acq O&M Operation and Maintenance, Army		
Fiscal Year	BY 2017 \$M	
	Total Program	
2019		10.6
2020		10.6
2021		10.6
2022		10.7
2023		10.6
2024		10.2
2025		10.2
2026		10.3
2027		10.2
2028		10.3
2029		10.2
2030		10.2
2031		10.3
2032		10.2
2033		10.2
2034		10.2
2035		10.2
2036		10.3
2037		10.2
2038		10.2
2039		10.2
2040		10.2
2041		10.2
2042		10.2
Subtotal		247.3

Low Rate Initial Production

There is no LRIP for this program.

Foreign Military Sales

None

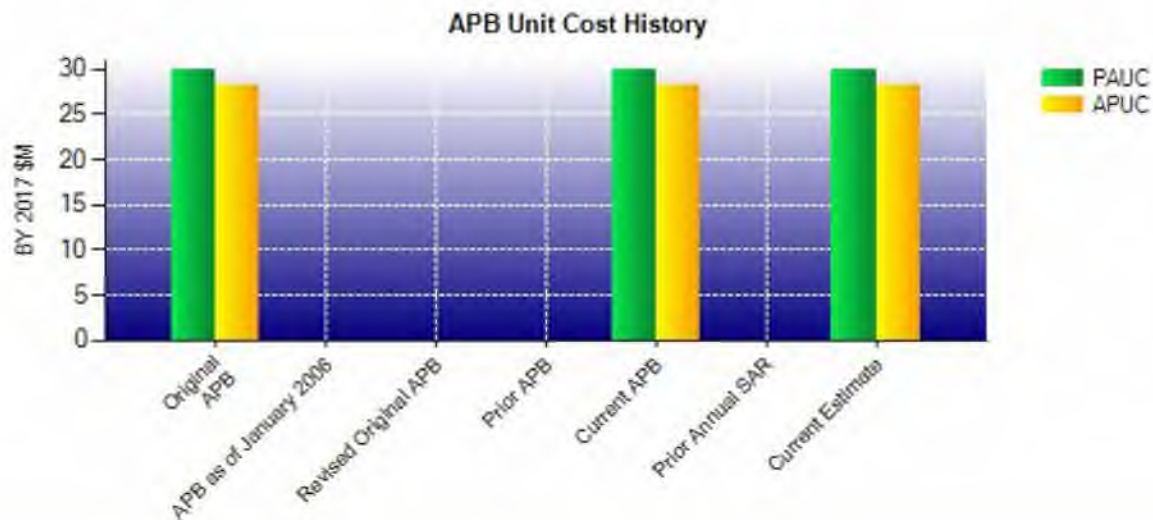
Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2017 \$M	BY 2017 \$M	% Change
	Current UCR Baseline (Feb 2018 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	16219.8	16224.4	
Quantity	542	542	
Unit Cost	29.926	29.934	+0.03
Average Procurement Unit Cost			
Cost	15208.8	15208.4	
Quantity	539	539	
Unit Cost	28.217	28.216	0.00

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2017 \$M	BY 2017 \$M	% Change
	Original UCR Baseline (Feb 2018 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	16219.8	16224.4	
Quantity	542	542	
Unit Cost	29.926	29.934	+0.03
Average Procurement Unit Cost			
Cost	15208.8	15208.4	
Quantity	539	539	
Unit Cost	28.217	28.216	0.00



APB Unit Cost History					
Item	Date	BY 2017 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Feb 2018	29.926	28.217	41.640	39.750
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	Feb 2018	29.926	28.217	41.640	39.750
Prior Annual SAR	N/A	N/A	N/A	N/A	N/A
Current Estimate	Dec 2017	29.934	28.216	41.397	39.511

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
41.640	-0.245	0.000	-0.008	0.000	0.011	0.000	-0.001	-0.243	41.397

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
39.750	-0.231	0.000	-0.008	0.000	0.001	0.000	-0.001	-0.239	39.511

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	Jul 2017	N/A	Jul 2017
Milestone C	N/A	Aug 2021	N/A	Aug 2021
IOC	N/A	Nov 2024	N/A	Nov 2024
Total Cost (TY \$M)	N/A	22568.7	N/A	22437.2
Total Quantity	N/A	542	N/A	542
PAUC	N/A	41.640	N/A	41.397

Cost Variance

Summary TY \$M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Development Estimate)	815.8	21425.2	--	327.7	22568.7
Previous Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	--	--	--	--	--
Estimating	--	--	--	--	--
Other	--	--	--	--	--
Support	--	--	--	--	--
Subtotal	--	--	--	--	--
Current Changes					
Economic	-7.2	-124.7	--	-0.7	-132.6
Quantity	--	--	--	--	--
Schedule	--	-4.1	--	--	-4.1
Engineering	--	--	--	--	--
Estimating	+2.6	+0.5	--	+2.8	+5.9
Other	--	--	--	--	--
Support	--	-0.7	--	--	-0.7
Subtotal	-4.6	-129.0	--	+2.1	-131.5
Total Changes	-4.6	-129.0	--	+2.1	-131.5
CE - Cost Variance	811.2	21296.2	--	329.8	22437.2
CE - Cost & Funding	811.2	21296.2	--	329.8	22437.2

Summary BY 2017 \$M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Development Estimate)	766.2	15208.8	--	244.8	16219.8
Previous Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	--	--	--	--	--
Estimating	--	--	--	--	--
Other	--	--	--	--	--
Support	--	--	--	--	--
Subtotal	--	--	--	--	--
Current Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	--	--	--	--	--
Estimating	+2.5	-0.1	--	+2.5	+4.9
Other	--	--	--	--	--
Support	--	-0.3	--	--	-0.3
Subtotal	+2.5	-0.4	--	+2.5	+4.6
Total Changes	+2.5	-0.4	--	+2.5	+4.6
CE - Cost Variance	768.7	15208.4	--	247.3	16224.4
CE - Cost & Funding	768.7	15208.4	--	247.3	16224.4

Initial SAR - Above variances (if any) reflect changes since the SAR Baseline/APB.

SAR Baseline Reference: Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated February 01, 2018

RDT&E		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-7.2
Adjustment for current and prior escalation. (Estimating)		+1.6	+1.6
Increase due to rounding. (Estimating)		+0.9	+1.0
RDT&E Subtotal		+2.5	-4.6

Procurement		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-124.7
Acceleration of procurement buy profile of one MH-47G from FY 2029 to FY 2019 due to Overseas Contingency Operations. (Schedule)		0.0	-4.1
Adjustment for current and prior escalation. (Estimating)		+1.2	+1.2
Decrease in recurring production due to application of new outyear indices and alignment to FY 2019 PB. (Estimating)		-1.3	-0.7
Decrease in Other Support due to application of new outyear indices and alignment to FY 2019 PB. (Support)		-0.6	-0.7
Increase in Initial Spares due to application of new outyear indices and alignment to FY 2019 PB. (Support)		+0.3	0.0
Procurement Subtotal		-0.4	-129.0

Acq O&M		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-0.7
Increase due to refined estimating methodology. (Estimating)		+2.5	+2.8
Acq O&M Subtotal		+2.5	+2.1

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: EMD Block II
Contractor: Boeing
Contractor Location: Route 291 & Stewart Ave.
 Ridley Park, PA 19078-1099
Contract Number: W58RGZ-17-C-0059
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: July 27, 2017
Definitization Date: July 27, 2017

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
269.5	N/A	0	269.5	N/A	0	269.5	269.5

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/21/2017)	+1.5	-2.5
Previous Cumulative Variances	--	--
Net Change	+1.5	-2.5

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to travel costs not being incurred.

The unfavorable cumulative schedule variance is due to delay of induction of aircraft.

Notes

This is the first time this contract is being reported.

Contract Identification

Appropriation: RDT&E
Contract Name: ACRB NRE
Contractor: The Boeing Company
Contractor Location: Route 291 & Stewart Ave
 Ridley Park, PA 19078-1099
Contract Number: W58RGZ-14-D-0014
Contract Type: Cost Plus Fixed Fee (CPFF)
Award Date: April 15, 2016
Definitization Date: April 15, 2016

Contract Price								
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
51.3	N/A	0	51.3	N/A	0	51.3	51.3	

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	-5.3	-1.9
Previous Cumulative Variances	--	--
Net Change	-5.3	-1.9

Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to design improvements and due to the flight test schedule and analysis taking longer than planned.

The unfavorable cumulative schedule variance is due to the addition of design improvement efforts and delays to the test schedule.

Notes

This is the first time this contract is being reported.

Contract Identification

Appropriation: RDT&E
Contract Name: Improved Drive Train Phase II
Contractor: The Boeing Company
Contractor Location: Route 291 & Stewart Ave
 Ridley Park, PA 19078-1099
Contract Number: W58RGZ-14-D-0075/8
Contract Type: Cost Plus Fixed Fee (CPFF)
Award Date: November 20, 2015
Definitization Date: November 20, 2015

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
49.1	N/A	0	49.1	N/A	0	49.1	49.1

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	-0.7	-4.4
Previous Cumulative Variances	--	--
Net Change	-0.7	-4.4

Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to testing costing more than planned.

The unfavorable cumulative schedule variance is due to late delivery of hardware components.

Notes

This is the first time this contract is being reported.

Contract Identification

Appropriation: RDT&E
Contract Name: Electrical Avionics Structural Integration (EASI)
Contractor: The Boeing Company
Contractor Location: Route 291 & Stewart Ave
 Ridley Park, PA 19078-1099
Contract Number: W58RGZ-14-D-0075/26
Contract Type: Cost Plus Fixed Fee (CPFF)
Award Date: November 20, 2015
Definitization Date: November 20, 2015

Contract Price								
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
44.8	N/A	0	44.8	N/A	0	44.8	44.8	

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	-1.5	-0.6
Previous Cumulative Variances	--	--
Net Change	-1.5	-0.6

Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to more drawing releases than planned.

The unfavorable cumulative schedule variance is due to more drawing releases than planned.

Notes

This is the first time this contract is being reported.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	3	0.00%
Production	0	0	539	0.00%
Total Program Quantity Delivered	0	0	542	0.00%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	22437.2	Years Appropriated	4
Expended to Date	135.7	Percent Years Appropriated	13.79%
Percent Expended	0.60%	Appropriated to Date	643.4
Total Funding Years	29	Percent Appropriated	2.87%

The above data is current as of February 12, 2018.

Operating and Support Cost

Cost Estimate Details

Date of Estimate: April 24, 2017
Source of Estimate: SCP
Quantity to Sustain: 470
Unit of Measure: Aircraft
Service Life per Unit: 25.00 Years
Fiscal Years in Service: FY 2023 - FY 2069

The costs are taken from the April 2017 SCP. It assumes an end state of 470 CH-47F Block II aircraft when fully fielded with an Operational tempo (OPTEMPO) of 174 peacetime flying hours per operational aircraft. While the common production costs of 69 MH-47Gs are included in the Procurement costs, they are excluded from the O&S costs as they are managed by Special Operations Aviation Regiment. The remaining aircraft are three RDT&E-funded aircraft that incur no O&S costs.

Sustainment Strategy

The CH-47F Block II weapon system follows the standard Army maintenance program, which is broken down into two levels of maintenance: Field and Sustainment. Field maintenance is performed by Combat Aviation Brigade personnel assigned to flight companies, aviation maintenance companies and aviation support companies. Sustainment maintenance is divided and primarily performed by three separate entities: the Original Equipment Manufacturers (OEM) and contractor field service representatives; Army depots located at fixed bases in the continental United States; and by the national maintenance sources of repair.

CH-47F Block II costs are based on CH-47F actual extracted from the O&S Management Information System (OSMIS). To calculate the CH-47F Block II costs, the CH-47F costs were adjusted by a factor to account for the increased reliability of modified parts.

Antecedent Information

The antecedent to the CH-47F Block II is the CH-47F, for which O&S costs are from the CH-47F SAR. The total O&S cost is based on 449 operational aircraft with a service life of 20 years peacetime OPTEMPO from FY 2007 through FY 2040. The reported CH-47F costs match the December 2017 CH-47F SAR, revised to BY 2017 dollars.

Annual O&S Costs BY2017 \$M		
Cost Element	CH-47F Block II Average Annual Cost Per Aircraft	CH-47F (Antecedent) Average Annual Cost Per Aircraft
Unit-Level Manpower	0.516	0.496
Unit Operations	0.250	0.085
Maintenance	0.749	1.430
Sustaining Support	0.010	0.023
Continuing System Improvements	0.214	0.256
Indirect Support	0.111	0.122
Other	0.000	0.000
Total	1.850	2.412

Item	Total O&S Cost \$M			
	CH-47F Block II			CH-47F (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	21737.0	23910.7	21737.0	21668.1
Then Year	40118.6	N/A	39060.6	N/A

Equation to Translate Annual Cost to Total Cost

Total cost = Average annual cost per aircraft x quantity x service life = \$1.850M * 470 * 25

Disposal Estimate Details

Date of Estimate: April 24, 2017
 Source of Estimate: SCP
 Disposal/Demilitarization Total Cost (BY 2017 \$M): Total costs for disposal of all Aircraft are 298.9